

## **Historic, Archive Document**

Do not assume content reflects current scientific knowledge, policies, or practices.



seml  
D1491  
5A1

# Grain Marketing Patterns of Local Cooperatives



Research Report 31  
Farmer Cooperative  
Service

U.S. Department  
of Agriculture



## PREFACE

In 40 States, Farmer Cooperative Service surveyed local cooperative associations that handle various grains, such as soybeans, beans and peas (dry edible), rice, and other similar commodities. Questionnaires were sent to 2,395 associations. Seventy percent, or 1,666, responded. Information on storage capacity and volume of grain handled was reported by 1,367 associations.

Information was requested for the fiscal year between July 1, 1971, and June 30, 1972. There was some variance with regard to the fiscal year reported by the associations. However, because 1971 and 1972 crop production years were relatively similar, the volume of grain handled was assumed to be about the same.

Data from all respondents were summarized and are presented here along with information concerning associations in 22 selected States. Eighteen of the 40 States surveyed have only a few grain cooperatives. Thus, data on these 18 States are not included, to avoid disclosing the confidentiality of individuals' responses. The 22 States include 98.2 percent of the cooperative associations responding to the survey.



## CONTENTS

	Page
Highlights . . . . .	iv
Introduction . . . . .	1
Characteristics of local grain cooperatives . . . . .	1
Ownership . . . . .	2
Licensed grain storage warehouses . . . . .	2
Federal income tax letter of exemption . . . . .	2
Organizational changes . . . . .	4
Member of a regional cooperative . . . . .	5
Services offered by regional cooperatives . . . . .	7
Services desired from regional cooperatives . . . . .	8
Storage capacity . . . . .	9
Grain volume marketed . . . . .	10
Distribution of grain . . . . .	15
Grain contract or commitment . . . . .	19
Grain sold under contract . . . . .	21
Grain transportation methods . . . . .	21

## HIGHLIGHTS

Local U.S. grain cooperatives could improve their marketing by:

- Improving transportation methods;
- Having more commitment or long-range contracts with regional cooperatives;
- Increasing volume handled; and
- Coordinating more with other surrounding local grain cooperatives as well as with regional cooperatives.

Local cooperative grain marketing associations each sold an average of 1,316,000 bushels in 1971/72, according to a survey taken by Farmer Cooperative Service. That amount included grain handled through grain banks and the Commodity Credit Corporation (CCC). The average volume marketed was 827,000 bushels for each cooperative location—many cooperatives had more than one branch.

Average storage capacity for each cooperative association was 615,000 bushels. When number of locations was taken into account (1.59 locations for each association), average capacity was 387,000 bushels.

More than 63 percent of the volume handled by the cooperatives was corn and wheat. Thirty-five percent was composed of soybeans, grain sorghum, oats, and barley.

Average annual turnover ratio of grain volume to storage capacity was 2.15. Eleven percent was marketed under the CCC program and 5 percent was handled through a grain bank. Under the CCC program, oats, corn, and wheat made up more than 94 percent of the volume. In grain banks, corn made up 71 percent of the volume.

Excluding grain handled through a grain bank or CCC, 18.9 percent was sold locally, 50.2 percent was sold to other cooperatives, and 30.9 percent was sold to other grain dealers. The 30.9 percent was composed of more than 465 million bushels of grain.

More than 43 percent of the grain was sold under short-term contract. Only 9.7 percent of respondents said that they had a long-term contract or commitment to market grain through a local cooperative.

Cooperatives transported more than 52 percent of the grain by truck, 45 percent by rail, and only 2.3 percent by barge. However,



93 percent of respondents' storage facilities were situated on rail lines. Straight-type trucks were owned by 64 percent of respondents; only 1 percent owned rail hopper cars.

Cooperatives were owned by local farmers, but in many cases, branches extended across a county, into several counties, or even statewide.

More than 85 percent of grain storages were licensed. Most of these were State licenses. Only 3.6 percent of cooperatives reported having both Federal and State licenses.

Forty-six percent of local cooperatives believed that services offered by regional cooperatives were adequate. More than 16 percent said that they would like help with grain transportation.



## GRAIN MARKETING PATTERNS OF LOCAL COOPERATIVES

*Charles A. Kraenzle and Francis P. Yager*

### INTRODUCTION

Methods of grain producing, harvesting, transporting, and storing—both at the farm and local elevators—have undergone many changes within the past 15 to 20 years. The shift to field shelling of corn, harvesting at higher moisture content, and the increasing volume of grain handled each year have forced local elevators to undergo many changes.

Because transportation rates continue to change, shifts occur in the source and destination of grains and in the types of facilities needed to store and handle grains. To develop fundamental information on grain flow and other selected features of the industry, Farmer Cooperative Service made a survey of local cooperatives in the United States. Information on grain flow, storage capacity, type of grain handled, and mode of transportation can be used to help improve the present marketing system.

The flow of grain to and from the local cooperative elevator to the next buyer is an important link in marketing grain. The need to identify and evaluate this particular phase is needed in helping analyze operations and problems in ongoing cooperatives.

### CHARACTERISTICS OF LOCAL GRAIN COOPERATIVES

The overall grain marketing patterns as well as several special features of local associations are reported here. Care has to be taken when making direct comparisons of grain cooperatives in different

States. There are many differences due to productivity of land, type of crops grown, number of cooperative and proprietary elevators, commitment of producers to cooperatives, location of elevators near terminals or processors, and location of elevators with respect to waterway and rail lines.

Respondents handled 16 different commodities. A number of these commodities are usually not referred to as grains. However, for simplicity, the word grain will be used to include 1, 2, or any number of the 16 commodities.

## Ownership

Eighty-eight percent of the cooperatives reported ownership to be by local farmers. Fewer than 10 percent belonged to a county or multicounty cooperative. By State, (table 1) county or multicounty ownership appeared to be greatest in Indiana, Illinois, and Ohio.

## Licensed Grain Storage Warehouses

Less than 86 percent of the cooperatives reported operating licensed grain storage warehouses.<sup>1</sup> The remainder gave no answer. One-fifth reported their warehouses were licensed with the Federal Government, and more than 61 percent of the cooperatives reported having a State license. Only a small number, 3.6 percent, reported having both a Federal and State license.

In Iowa, Kansas, and Nebraska, more than 97 percent reported having licensed grain storage warehouses. However, as shown in table 2, in several States a large percent of the respondents did not answer this question.

## Federal Income Tax Letter of Exemption

Cooperatives that have a letter of exemption may deduct (1) amounts paid as dividends during the taxable years on capital stock, and (2) amounts of income received from nonpatronage sources that are paid out on a patronage basis. Cooperatives without the letter of exemption cannot deduct these amounts. However, all farmer cooperatives that comply with the provisions of section 17 of the Revenue Act of 1962 may use patronage refunds to reduce their gross income for tax purposes.

---

<sup>1</sup> Grain storages are licensed to provide farmers a safe place to store grain. For this, warehousemen give farmers a negotiable receipt.

Table 1—Ownership of local grain cooperatives as reported  
by respondents, by selected States, 1971/72

State	Local farmers	County or multicounty cooperative	Other
<i>Number</i>			
Alabama	5	2	0
Colorado	15	3	0
Idaho	7	0	0
Illinois	87	23	0
Indiana	20	30	0
Iowa	192	10	3
Kansas	131	8	2
Louisiana	7	0	0
Michigan	23	2	0
Minnesota	145	5	1
Mississippi	8	1	0
Missouri	22	0	2
Montana	33	0	1
Nebraska	91	7	4
North Dakota	125	3	4
Ohio	54	22	2
Oklahoma	54	2	0
Oregon	5	1	0
South Dakota	66	1	1
Texas	57	10	3
Washington	20	1	0
Wisconsin	18	2	1
Total	1,185	133	24

Therefore, a Federal income tax letter of exemption is important to a local grain cooperative only if it pays a significant amount of dividends on capital stock or has a significant amount of income from nonpatronage sources.

Fifty-one percent of the cooperatives stated that they had a letter of exemption. Forty-seven percent stated that they did not have a letter of exemption. Only 2 percent failed to answer this question.

In the selected States (table 3), cooperatives reporting possession of a letter of exemption ranged from 14.3 percent in Wisconsin to 100 percent in Alabama and Idaho.

Table 2—Respondents with licensed grain storage warehouses and type of license, by selected States, 1971/72

State	Cooperatives with licensed grain storage warehouses	Type of license			No answer
		Federal	State	Federal & State	
<i>Number</i>					
Alabama	2	1	1	0	5
Colorado	14	12	2	0	4
Idaho	7	6	1	0	0
Illinois	98	33	57	8	12
Indiana	11	10	1	0	39
Iowa	200	46	148	6	5
Kansas	139	57	82	0	2
Louisiana	6	0	6	0	1
Michigan	23	3	17	3	2
Minnesota	141	10	127	4	10
Mississippi	4	3	1	0	5
Missouri	14	3	10	1	10
Montana	29	1	27	1	5
Nebraska	100	15	83	2	2
North Dakota	121	9	108	4	11
Ohio	57	16	35	6	21
Oklahoma	50	21	29	0	6
Oregon	5	1	4	0	1
South Dakota	62	4	56	2	6
Texas	54	16	32	6	16
Washington	21	7	12	2	0
Wisconsin	7	2	2	3	14

## Organizational Changes

In reply to a question asking if the present cooperative was the result of a merger, consolidation, or unification within the past 10 years, 8.3 percent stated yes. In other words, 114 cooperatives reported that they had undergone some type of organizational change within the past 10 years.

According to responses by State, cooperatives in 17 of the 22 States reported some changes. Iowa had the largest number of organizational changes with 21 and Kansas was second with 15 (table

Table 3—Respondents with a letter of Federal income tax exemption, by selected States, 1971/72

State	Federal income tax letter of exemption		No answer
	With	Without	
	<i>Percent</i>		
Alabama	100.0	0	0
Colorado	44.4	55.6	0
Idaho	100.0	0	0
Illinois	39.1	60.0	.9
Indiana	72.0	28.0	0
Iowa	21.0	75.6	3.4
Kansas	19.9	79.4	.7
Louisiana	71.4	28.6	0
Michigan	44.0	52.0	4.0
Minnesota	70.2	27.8	2.0
Mississippi	88.9	11.1	0
Missouri	50.0	45.8	4.2
Montana	55.9	44.1	0
Nebraska	62.7	33.3	4.0
North Dakota	78.0	17.4	4.6
Ohio	61.5	35.9	2.6
Oklahoma	25.0	75.0	0
Oregon	50.0	50.0	0
South Dakota	47.1	51.5	1.4
Texas	82.9	15.7	1.4
Washington	81.0	19.0	0
Wisconsin	14.3	85.7	0

4). However, it is difficult to compare changes between States, because the total number of respondents in some States was small compared with others.

### Member of a Regional Cooperative

Cooperatives in Illinois, Iowa, Kansas, Minnesota, Ohio, Oklahoma, Texas, and Wisconsin reported membership in five or more regional cooperatives or other associations (table 5). At least one or more cooperatives in 18 of 22 States reported membership in three or fewer regional cooperatives and other associations.

Table 4—Respondent cooperatives reporting merger, consolidation, or unification within the past 10 years, by selected States, 1971/72

State	Respondents
	<i>Number</i>
Alabama	0
Colorado	0
Idaho	1
Illinois	12
Indiana	4
Iowa	21
Kansas	15
Louisiana	0
Michigan	0
Minnesota	13
Mississippi	0
Missouri	4
Montana	3
Nebraska	11
North Dakota	8
Ohio	2
Oklahoma	1
Oregon	1
South Dakota	6
Texas	5
Washington	1
Wisconsin	1

In total, 76 percent of the respondents reported that they were a member of one or more associations. Respondents belonging to one or more regional cooperatives or other associations were:

<i>Associations Number</i>	<i>Members of associations Percent</i>
1	21.7
2	23.3
3	17.4
4	7.8
5	4.3
6 or more	1.8

Although respondents were asked to list names of regional cooperatives of which they were a member, in some cases they listed accounting or financial associations. Even though this is true, it



Table 5—Local cooperative membership in regional cooperatives and other associations, by selected States, 1971/72

State	None	Number of regional cooperatives and other associations					
		1	2	3	4	5	6 or more
<i>Number</i>							
Alabama	2	4	1	0	0	0	0
Colorado	1	4	9	3	1	0	0
Idaho	0	3	3	1	0	0	0
Illinois	32	31	29	9	3	3	0
Indiana	15	30	4	1	0	0	0
Iowa	6	11	22	69	47	32	16
Kansas	4	6	68	39	14	4	0
Louisiana	3	2	2	0	0	0	0
Michigan	9	11	3	2	0	0	0
Minnesota	46	26	27	22	22	7	1
Mississippi	6	3	0	0	0	0	0
Missouri	7	13	3	1	0	0	0
Montana	17	5	12	0	0	0	0
Nebraska	14	6	32	39	7	0	0
North Dakota	64	30	31	3	0	0	0
Ohio	17	47	10	3	0	1	0
Oklahoma	2	7	27	11	4	4	1
Oregon	1	2	2	1	0	0	0
South Dakota	28	12	15	10	1	0	0
Texas	9	12	11	19	5	7	7
Washington	3	14	2	2	0	0	0
Wisconsin	0	13	4	1	1	1	0

appears that much overlapping of services offered by regionals exists. Whether this type of competition is good or whether a more efficient procurement and marketing system could be obtained through more coordination is the question that producers and cooperative leaders need to be asking themselves.

### Services Offered by Regional Cooperatives

To determine what and how many services offered by regional cooperatives are used by local cooperatives, respondents were asked to check the different services listed on the questionnaire where applicable.

Seventeen percent reported that their regional cooperative offered no services. The applicability of the services offered by regional cooperatives as shown by the percent of cooperatives responding was:

<i>Service offered</i>	<i>Percent response</i>
Farm supplies	72.1
Feed	71.0
Contracting grain	70.0
Agricultural chemicals	68.7
Fertilizer	68.1
Seeds	66.4
Employee education	61.0
Petroleum products	56.2
Services of a fieldman	55.4
General farm information	53.6
Grain storage	53.3
Credit	48.1
Hedging grain	46.7
Accounting service	46.5
Farm equipment	39.1
Other	3.5

### Services Desired From Regional Cooperatives

Cooperative managers were asked to list services they would like to have offered by the regional cooperative they patronize. More than 73 percent of the respondents did not answer this question. However, from 366 respondents who did reply, we ascertained that a wide variety of services was desired.

To summarize the answers to this particular question, it was necessary to place each answer into a particular category that best described the service desired. For example, all answers such as "None," "No comment," "OK like the present," "Doing fine job," were counted as saying that services from their regional cooperative are adequate. Forty-six percent of those responding were in this category.

Some respondents listed only one service they would like to have offered while others listed two, three, or more.

<i>Service desired</i>	<i>Percent response</i>
Services are adequate	45.9
Help with transportation of grain	16.4
More technical and research assistance	11.7
Improve the marketing system	11.5
Supply more and quicker market information	9.0
Process and manufacture grain	5.2
Help with grain hedging	4.1
Export more grain	3.3
Increase grain storage	3.0
Aid with financing	2.5
Merger of regional cooperatives	2.2
Use of marketing contracts	1.4
Increase supplies or marketing of new products	1.4
Increase patronage refunds	.8

Other services desired were also listed but not as frequently as the categories mentioned above.

Transportation of grain appears to be the major problem facing local grain cooperatives. Improved transportation would help their grain marketing. Another major problem is the marketing system. Respondents believed the market was too irregular in grain pricing and the marketing system was too inefficient. From the responses, local cooperatives would like to see the regionals become more active in making the grain marketing system more competitive.

Comments were also made on the need for more coordination among regionals.

### Storage Capacity

Average storage capacity for each association in the 22 States ranged from 107,000 bushels in Alabama to 2,328,000 bushels in Washington (table 6). In Idaho, Missouri, Texas, and Washington, average storage capacity of respondents was more than 1 million bushels.

This changes, however, when we consider the total number of elevators or locations belonging to one association. As shown in table 7, the elevator locations for the 22 selected States ranged from 1 in Louisiana to 5.05 in Washington. The average number of locations for each association was 1.59. Average storage capacity for each location ranged from 121,000 bushels in Wisconsin to 839,000 bushels in Texas. Average storage capacity of these elevators was

Table 6—Storage capacity of respondents' cooperative elevators, by selected States, 1971/72

State	Total storage capacity	Average storage capacity per association
<i>Bushels</i>		
Alabama	750,100	107,157
Colorado	15,247,662	847,092
Idaho	15,970,148	2,281,450
Illinois	66,410,132	603,728
Indiana	21,195,923	423,918
Iowa	140,531,029	685,517
Kansas	138,307,298	980,903
Louisiana	2,924,200	417,743
Michigan	6,209,274	248,371
Minnesota	51,370,856	340,204
Mississippi	4,920,000	546,667
Missouri	25,564,500	1,065,188
Montana	7,910,311	232,656
Nebraska	67,519,151	661,952
North Dakota	35,648,340	270,063
Ohio	25,319,448	324,608
Oklahoma	39,509,975	705,535
Oregon	4,736,392	789,399
South Dakota	18,330,748	269,570
Texas	83,865,558	1,198,079
Washington	48,885,919	2,327,901
Wisconsin	3,976,800	189,371

387,000 bushels. For each association, average storage capacity was 615,000 bushels.

All responding associations in total owned storage facilities for 837 million bushels of grain. Seventy-three percent of the storage facilities were upright structures, and 27 percent were flat structures (vertical height less than width or diameter).

### Grain Volume Marketed

The 1,367 local cooperative associations marketed 1,798 million bushels during the 1971 crop year. This included grain handled through a grain bank <sup>2</sup> and Commodity Credit Corporation (CCC).

<sup>2</sup> A grain bank consists of grain that is stored by the local elevator for the producer-member. The producer can then use the grain at a later date for feed.

Table 7—Respondent cooperatives' average storage capacity and volume handled, by selected States, 1971/72

State	Locations per association	Storage capacity	Volume handled per location
	<i>Number</i>	-----	<i>Bushels</i> -----
Alabama	1.14	93,763	446,243
Colorado	1.28	662,942	1,587,222
Idaho	4.29	532,338	573,809
Illinois	1.66	362,897	914,749
Indiana	2.14	198,093	730,885
Iowa	1.40	487,955	930,712
Kansas	1.79	546,669	733,461
Louisiana	1.00	417,743	804,907
Michigan	1.12	221,760	624,115
Minnesota	1.28	266,170	908,417
Mississippi	1.22	447,273	831,775
Missouri	<sup>1</sup> 4.58	232,405	477,358
Montana	1.21	192,934	694,155
Nebraska	1.23	540,153	1,149,782
North Dakota	1.20	225,622	1,284,247
Ohio	1.74	186,172	760,741
Oklahoma	1.68	420,319	650,377
Oregon	2.67	296,025	259,784
South Dakota	1.18	229,134	629,399
Texas	1.43	838,656	915,281
Washington	5.05	461,188	534,540
Wisconsin	1.57	120,509	227,756

<sup>1</sup> Includes locations belonging to a centralized cooperative.

More than 63 percent of the grain was composed of corn and wheat. Thirty-five percent was made up of soybeans, grain sorghum, oats, and barley (table 8).

More than 90 million bushels were handled through operations of a grain bank. Less than 200 million bushels or more than 11 percent of the total volume marketed was sold through CCC (table 9).

In a grain bank, more than 71 percent of the total grain handled by respondents was corn. Grain sorghum (14.6 percent) was the next most important grain in terms of volume (table 10).

Of the volume handled through CCC, oats, corn, and wheat made up more than 94 percent of the total volume (table 10). The grain volume handled through operation of a grain bank and CCC for each State is shown in table 11.

Table 8—Type and volume of grain handled by  
respondents, 1971/72

[Includes grain handled through grain bank and CCC]

Type of grain	Total volume	
	<i>Bushels</i>	<i>Percent</i>
Corn	682,840,935	37.96
Wheat	455,547,424	25.33
Soybeans	219,698,016	12.22
Grain sorghum	163,771,204	9.11
Oats	160,504,387	8.92
Barley	84,429,234	4.69
Rye	6,836,841	.38
Flax	7,049,599	.39
Rice	6,999,029	.39
Dry beans	3,897,711	.21
Dry peas	1,286,441	.07
Sunflower	4,653,500	.26
Buckwheat	288,295	.02
Millet	487,453	.03
Other <sup>1</sup>	258,545	.02
Triticale	910	( <sup>2</sup> )
Total	1,798,549,524	100.00

<sup>1</sup> Includes screenings, speltz, and navy beans.

<sup>2</sup> Less than 0.005 percent.

Total and average grain volume for each of the 22 selected States is shown in table 12. The average grain volume marketed through each cooperative association ranged from 358,000 bushels in Wisconsin to 2,698,000 bushels in Washington.

At an individual elevator, the volume handled ranged from 228,000 bushels per association in Wisconsin to 1,284,000 bushels in North Dakota.

Annual turnover (ratio of grain volume to storage capacity) for all respondents came to 2.15 (table 12). In 10 States, the turnover was below 2. If the turnover rate can be considered as a measure of efficiency, then local cooperatives in these particular States need to consider ways to improve their grain purchasing and handling methods to increase volume handled.

Table 9—Breakdown of type and volume of grain handled  
by respondents, 1971/72

Type of grain	Regular market <sup>1</sup>	Grain bank	CCC
<i>Bushels</i>			
Corn	558,111,382	64,402,740	60,326,813
Wheat	402,852,117	3,597,581	49,097,726
Soybeans	218,939,069	138,113	620,834
Grain sorghum	145,536,961	13,232,713	5,001,530
Oats	75,116,412	6,816,431	78,571,544
Barley	79,778,883	2,092,791	2,557,560
Rye	5,464,453	104,015	1,268,373
Flax	5,038,207	0	2,011,392
Rice	6,872,779	0	126,250
Dry beans <sup>2</sup>	3,722,432	0	175,279
Dry peas	1,286,441	0	0
Sunflower	4,653,500	0	0
Buckwheat	288,295	0	0
Millet	487,453	0	0
Other <sup>3</sup>	258,545	0	0
Triticale	910	0	0
	1,508,407,839	90,384,384	199,757,301

<sup>1</sup> Includes local sales to cooperatives and other grain dealers.

<sup>2</sup> Includes mung beans.

<sup>3</sup> Includes screening, speltz, and navy beans.

Table 10—Commodities handled by respondents through  
grain bank and CCC, 1971/72

Type of commodity	Grain bank	CCC
<i>Percent</i>		
Corn	71.25	30.20
Wheat	3.98	24.58
Soybeans	.15	.31
Grain sorghum	14.64	2.50
Oats	7.54	39.33
Barley	2.32	1.28
Rye	.12	.64
Flax	0	1.01
Rice	0	.06
Dry beans <sup>1</sup>	0	.09
	100.00	100.00

<sup>1</sup> Includes mung beans.



Table 11—Volume of grain bank and CCC grain handled by cooperative elevator respondents, by selected States, 1971/72

State	Grain bank	CCC
<i>Bushels</i>		
Alabama	15,000	9,461
Colorado	494,840	11,148,108
Idaho	308,360	112,000
Illinois	4,306,141	1,416,043
Indiana	6,235,654	957,775
Iowa	18,566,545	10,572,014
Kansas	11,940,686	8,448,952
Louisiana	0	0
Michigan	1,315,425	453,926
Minnesota	4,541,010	10,570,556
Mississippi	0	0
Missouri	5,095,146	690,503
Montana	178,004	2,152,518
Nebraska	17,778,866	16,123,843
North Dakota	1,634,026	80,735,551
Ohio	8,065,857	31,113,500
Oklahoma	4,008,928	3,169,481
Oregon	1,042	40,232
South Dakota	749,267	14,121,178
Texas	502,552	4,990,672
Washington	319,528	954,071
Wisconsin	1,050,914	945,077

The type of grain handled by cooperative respondents in each State is shown in table 13. Table 13 does not include grain handled through operation of a grain bank or CCC.

Soybeans accounted for the major portion of grain volume handled in Mississippi and Alabama. Wheat was most important in Washington, Kansas, North Dakota, Oklahoma, Oregon, Colorado, and Idaho. States where corn constituted a large portion of the grain volume handled by cooperatives were Wisconsin, Montana, Illinois, Iowa, Indiana, and Michigan. Three-quarters of the grain volume handled by Texas cooperatives was grain sorghum. Rice was prominent in Louisiana.



Table 12—Grain volume handled by cooperative elevator respondents and turnover, by selected States, 1971/72<sup>1</sup>

State	Total grain volume handled	Average grain volume handled per association	Turnover
	----- Bushels -----		Number
Alabama	3,569,944	509,992	4.76
Colorado	36,506,106	2,028,117	2.39
Idaho	17,214,278	2,459,183	1.08
Illinois	167,399,052	1,521,810	2.52
Indiana	78,204,727	1,564,095	3.69
Iowa	268,044,936	1,307,536	1.91
Kansas	185,565,667	1,316,069	1.34
Louisiana	5,634,350	804,907	1.93
Michigan	17,475,210	699,008	2.81
Minnesota	175,324,432	1,161,089	3.41
Mississippi	9,149,523	1,016,614	1.86
Missouri	52,509,344	2,187,889	2.05
Montana	28,460,352	837,069	3.60
Nebraska	143,722,767	1,409,047	2.13
North Dakota	202,911,082	1,537,205	5.69
Ohio	103,460,722	1,326,420	4.09
Oklahoma	61,135,431	1,091,704	1.55
Oregon	4,156,541	692,757	.88
South Dakota	50,351,894	740,469	2.75
Texas	91,528,143	1,307,545	1.09
Washington	56,661,289	2,698,157	1.16
Wisconsin	7,515,956	357,903	1.89

<sup>1</sup> Includes grain handled through grain bank and CCC.

## Distribution of Grain

Of the total volume marketed by respondents, 18.9 percent was sold locally, 50.2 percent was marketed through cooperative channels, and 30.9 percent was distributed to other terminals or processors. These percents do not include grain handled through a grain bank or CCC.

However, this shows that respondents alone marketed almost 466 million bushels through noncooperative channels. Of the total volume marketed to cooperatives from local cooperatives, 82.5 percent moved to terminals.

Table 13—Types of grain handled by respondents, by  
selected States, 1971/72<sup>1</sup>

State	Corn	Wheat	Soybeans	Grain sorghum	Oats	Barley	Rye
				<i>Percent</i>			
Alabama	20.15	8.95	69.40	0.67	0.81	0.02	0
Colorado	21.37	54.26	0	12.87	2.35	4.64	1.50
Idaho	0	52.08	0	0	1.66	41.33	0
Illinois	70.42	4.31	23.87	.40	.98	0	.02
Indiana	64.74	7.77	25.82	.20	1.46	0	.01
Iowa	66.74	.07	29.59	.08	3.17	0	0
Kansas	10.75	62.63	1.20	21.89	.92	2.41	.10
Louisiana	0	0	43.00	.62	0	0	0
Michigan	60.14	19.36	5.25	0	5.19	.10	.14
Minnesota	41.33	12.62	17.36	0	15.71	9.63	.89
Mississippi	2.88	3.37	89.97	2.17	1.61	0	0
Missouri	47.39	10.50	37.05	3.29	1.77	<sup>2</sup>	0
Montana	0	71.34	0	0	2.47	26.15	0
Nebraska	46.34	25.74	2.48	22.13	1.95	.38	.70
North Dakota	1.13	61.46	.79	.50	11.02	19.90	.97
Ohio	49.24	16.62	26.99	.01	7.11	.01	.01
Oklahoma	1.90	61.03	.59	20.23	1.94	14.26	.03
Oregon	2.61	59.48	0	0	11.80	24.91	.21
South Dakota	24.26	30.29	2.21	3.13	27.36	4.57	3.57
Texas	6.67	8.87	3.53	75.52	.99	.07	.05
Washington	1.37	81.20	0	.01	.47	15.95	.16
Wisconsin	85.46	.43	7.59	0	5.92	.58	.02

Table 13—Types of grain handled by respondents, by selected States, 1971/72—Continued

State	Flax	Rice	Dry beans & mung	Dry peas	Sunflower	Buckwheat	Millet	Other <sup>3</sup>
	<i>Percent</i>							
Alabama	0	0	0	0	0	0	0	0
Colorado	0	0	2.17	0	0	0.64	0.20	0
Idaho	0	0	0	4.93	0	0	0	0
Illinois	0	0	0	0	0	0	0	0
Indiana	0	0	0	0	0	0	0	0
Iowa	0	0	.35	0	2	0	0	0
Kansas	0	0	0	0	0	0	0	.10
Louisiana	0	56.38	0	0	0	0	0	0
Michigan	0	0	9.57	0	0	.23	0	.02
Minnesota	.62	0	.32	2	1.40	.01	.09	.02
Mississippi	0	0	0	0	0	0	0	0
Missouri	0	0	0	0	0	0	0	0
Montana	.04	0	0	0	0	0	0	0
Nebraska	0	0	.21	0	0	.06	.01	0
North Dakota	2.46	0	0	.02	1.54	.01	.20	2
Ohio	0	0	0	0	0	0	0	.01
Oklahoma	0	0	.02	0	0	0	0	0
Oregon	0	0	.52	.39	0	0	0	.08
South Dakota	2.99	0	0	0	1.51	0	.11	0
Texas <sup>4</sup>	0	4.30	0	0	0	0	0	0
Washington	0	0	.09	.75	0	0	0	0
Wisconsin	0	0	0	0	0	0	0	0

<sup>1</sup> Does not include grain handled through grain bank and CCG.

<sup>3</sup> Includes screenings, speltz, and navy beans.

<sup>4</sup> A small amount of triticale, less than 0.05 percent, was also reported.

<sup>2</sup> Less than 0.05 percent.

Local cooperatives in seven States sold more than 50 percent of their grain in cooperative channels. Oklahoma and Kansas sold the least amount of grain to noncooperatives (table 14). In five States—Louisiana, Nebraska, Oklahoma, South Dakota, and Wisconsin—more than one-third of the grain volume was sold locally.

More than half the grain sold locally was corn. Grain sorghum and oats made up another 30 percent of local sales (table 15).

Of the total sales of grain to cooperatives and noncooperatives, corn, wheat, and soybeans made up 84.7 and 77.8 percent.

If local cooperatives want their regional cooperatives to improve the marketing system, they will need to make a greater commitment

Table 14—Disposition of grain sold by cooperative elevator respondents, by selected States, 1971/72<sup>1</sup>

State	Grain sold—		
	Locally	To cooperatives	To noncooperatives
	<i>Percent</i>		
Alabama	25.1	26.7	48.2
Colorado	29.8	59.0	11.2
Idaho	17.2	29.8	53.0
Illinois	7.8	52.0	40.2
Indiana	7.4	69.1	23.5
Iowa	23.6	56.5	19.9
Kansas	22.3	70.7	7.0
Louisiana	38.7	10.5	50.8
Michigan	18.7	51.5	29.8
Minnesota	18.7	29.8	51.5
Mississippi	5.2	21.5	73.3
Missouri	32.9	46.6	20.5
Montana	6.5	58.5	35.0
Nebraska	33.4	47.1	19.5
North Dakota	8.2	55.1	36.7
Ohio	10.3	53.8	35.9
Oklahoma	37.7	57.5	4.8
Oregon	16.8	21.9	61.3
South Dakota	36.7	22.9	40.4
Texas	17.3	46.6	36.1
Washington	2.1	23.3	74.6
Wisconsin	42.3	1.7	56.0

<sup>1</sup> Does not include grain handled through a grain bank and CCC.

Table 15—Distribution of grain type sold by cooperative elevator respondents, 1971/72

Type of grain	Grain sold—		
	Locally	To cooperatives	To noncooperatives
	<i>Percent</i>		
Corn	53.1	32.5	34.5
Wheat	7.2	34.4	26.0
Soybeans	1.3	17.8	17.3
Grain sorghum	17.7	7.6	8.0
Oats	11.9	2.5	4.8
Barley	7.1	3.3	7.4
Rye	.4	.3	.4
Flax	0	.4	.5
Rice	1.1	.3	.3
Dry beans	0	.4	.1
Dry peas	0	.1	.2
Sunflower	.1	.4	.4
Buckwheat	1	1	1
Millet	0	0	.1
Other	.1	0	0
Triticale	1	0	1
Total	100.0	100.0	100.0

<sup>1</sup> Less than 0.05 percent.

to their cooperatives than the percents above show. For regional cooperatives to become more competitive, they will need to market a larger volume. This appears feasible if grain were kept in cooperative channels.

### Grain Contract or Commitment

Responses to the issues of contract or commitment made it clear that cooperative commitment in grain marketing was lacking. Only 9.7 percent of the respondents stated that they had a contract or commitment to market grain through a regional cooperative. A small number—2.8 percent—gave no answer.

Responses to marketing grain under contract or commitment through a noncooperative were different. More than 3 percent stated

that they did have a contract or agreement with other grain dealers. However, 30 percent did not answer the question. Only 67 percent stated they did not have a contract or commitment with other grain dealers.

In none of the States did it appear that cooperatives were committed to market grain to their regional cooperative. As shown in table 16, in some of the major grain producing States, only one-fifth or less of the respondents reported having a contract or commitment to market grain through a regional cooperative.

Table 16—Respondents who have a contract or commitment to market grain through a regional cooperative or noncooperative, by selected States, 1971/72

State	Regional cooperative			Noncooperative		
	Yes	No	No answer	Yes	No	No answer
<i>Number</i>						
Alabama	3	3	1	1	1	5
Colorado	2	16	0	0	9	9
Idaho	3	4	0	0	4	3
Illinois	10	97	3	2	80	28
Indiana	8	41	1	1	31	18
Iowa	30	171	4	4	131	70
Kansas	6	132	3	2	118	21
Louisiana	2	5	0	0	6	1
Michigan	5	20	0	0	14	11
Minnesota	10	138	3	11	112	28
Mississippi	0	9	0	0	6	3
Missouri	2	22	0	0	15	9
Montana	7	27	0	1	17	16
Nebraska	3	92	7	1	72	29
North Dakota	15	112	5	12	67	53
Ohio	6	70	2	2	56	20
Oklahoma	5	51	0	0	30	26
Oregon	0	6	0	0	5	1
South Dakota	4	61	3	2	44	22
Texas	7	59	4	3	44	23
Washington	0	21	0	0	19	2
Wisconsin	0	20	1	1	17	3
Total	128	1,177	37	43	898	401

In Minnesota, there was as much commitment to other grain dealers as to cooperatives. Ten cooperatives reported they had a commitment to a regional cooperative, while 11 cooperatives stated they had a commitment to market grain to other grain dealers. However, in almost all States a relatively large number of the cooperatives did not answer the question on marketing grain to a noncooperative, compared with marketing to a regional cooperative.

### Grain Sold Under Contract

Respondents reported that 43.6 percent of the total grain volume (excluding grain bank and CCC grain) was sold under contract (that is, short-term contracting). This should not be confused with the above section concerning contracts or commitment to market grain.

In individual States, the percent of grain contracted ranged from 16.9 to 85.2 percent (table 17). Almost 94 percent of the grain sold under contract consisted of corn, wheat, soybeans, and grain sorghum (table 18).

Also included in tables 17 and 18 are the percent and type of grain hauled direct by cooperatives from farm to terminal or processor.

### Grain Transportation Methods

More grain was transported by truck than by rail or barge. In fact, of 1,508 million bushels, 52.3 percent (789 million bushels) moved by truck. Forty-five percent was transported by rail. Only 2.3 percent moved by barge. Other methods were used to transport the remaining volume of grain, including movement by tractor and wagon.

Less than 3 percent of the 1,508 million bushels was hauled direct by the cooperatives from farm to terminal or processor. This method allowed local cooperatives to eliminate costs of handling and storing grain at the local elevator.

By individual State, grain movements by truck ranged from 21.5 percent in Mississippi to 81.2 percent in Texas. Except for Alabama and Louisiana, the volume of grain moved by rail ranged from 14.7 percent in Texas to 71.9 percent in North Dakota (table 19). Cooperatives in Alabama reported no grain being moved by rail. In Louisiana, only a small amount was shipped by rail.



Table 17—Grain sold under contract or hauled direct by  
all respondents, by selected States, 1971/72

State	Sold under short-term contract	Hauled direct
<i>Percent</i>		
Alabama	48.4	1.0
Colorado	25.5	0
Idaho	72.8	3.6
Illinois	52.2	9.0
Indiana	47.2	0
Iowa	43.7	3.0
Kansas	47.2	1.2
Louisiana	40.0	22.0
Michigan	31.9	2.1
Minnesota	35.0	.6
Mississippi	85.2	0
Missouri	74.2	2.0
Montana	64.1	.6
Nebraska	42.7	.6
North Dakota	32.5	0
Ohio	45.3	4.7
Oklahoma	28.7	1.0
Oregon	44.0	1.5
South Dakota	16.9	1.7
Texas	53.2	2.7
Washington	41.1	1.7
Wisconsin	47.9	1.0

Although a number of factors, such as equipment owned or leased, rate structure, distance of haul, volume of grain to be hauled, etc., dictated choosing a particular transportation method, it is possible that local grain cooperatives could move more grain by rail. It was found that 93 percent of respondents' storage facilities are situated on a rail line. Thus, it appears that only 7 percent could not use rail hopper cars for transporting grain. The percent of upright and flat storage on and off a rail line is:

	<i>Percent</i>	
	<i>Upright</i>	<i>Flat</i>
On rail line	69	24
Off rail line	4	3



Table 18—Distribution of type of grain sold under contract or hauled directly by respondents, 1971/72

Type of grain	Sold under contract	Hauled direct
<i>Percent</i>		
Corn	37.5	56.8
Wheat	28.5	9.6
Soybeans	17.8	20.4
Grain sorghum	9.9	3.7
Oats	2.1	3.5
Barley	3.0	2.5
Rye	.2	.1
Flax	.3	0
Rice	0	3.3
Dry beans	.2	0
Dry peas	.1	0
Sunflower	.4	0
Buckwheat	0	.1
Total	100.0	100.0

A look at transportation equipment owned and leased by local cooperatives provides some insight into the reason for the major part of grain volume being moved by truck. More than 64 percent of the respondents reported owning a straight-type truck. In fact, in each of the 22 States, at least 2 or more cooperatives reported ownership of a straight-type truck. Very few cooperatives reported leasing this type of equipment (table 20).

Less than 9 percent reported ownership of a tractor-trailer truck. Ownership of this type of equipment was not much greater than leasing. In the 22 States, 117 cooperatives reported owning tractor-trailer equipment, while 83 cooperatives reported leasing it.

In operation of rail hopper cars and barges, more cooperatives leased rather than operated owned equipment. More than half the respondents reporting leasing rail hopper cars and barges in Iowa, Illinois, and Indiana. Four associations owned barges and eight associations leased barges.

In total, 30 percent of the respondents reported neither owning nor leasing equipment for transporting grain.

Table 19—Mode of grain transportation by selected States, 1971/72

State	Truck	Rail	Barge	Other
<i>Percent</i>				
Alabama	52.0	0	48.0	0
Colorado	77.5	22.5	0	0
Idaho	23.4	68.4	8.2	0
Illinois	70.3	24.5	5.2	0
Indiana	64.3	35.4	0	.3
Iowa	50.9	48.6	.5	0
Kansas	37.7	61.3	0	1.0
Louisiana	76.7	.6	16.6	6.1
Michigan	66.6	33.4	0	0
Minnesota	53.5	46.1	0	.4
Mississippi	21.5	40.2	38.3	0
Missouri	47.1	50.6	2.3	0
Montana	34.9	65.1	0	0
Nebraska	49.2	50.8	0	0
North Dakota	28.1	71.9	0	0
Ohio	60.6	39.4	0	0
Oklahoma	52.2	47.7	.1	0
Oregon	51.2	26.5	22.3	0
South Dakota	52.0	48.0	0	0
Texas	81.2	14.7	0	4.1
Washington	27.1	48.7	24.2	0
Wisconsin	75.6	24.4	0	0

As far as type of grain transported, corn, wheat, soybeans, and grain sorghum composed more than four-fifths of the total volume. The above grains composed 87 percent of the volume shipped by truck, 88.4 percent shipped by rail, and 95.7 percent shipped by barge. The percent of each type of grain moved by the various transportation methods is shown in tables 21 and 22.

If grain marketing by local cooperatives is to be improved, more coordination will be needed not only between local and regional cooperatives but also between and among local cooperatives. In a few cases, a coordinated transportation system has been developed by local cooperatives in a grain producing area. However, more local cooperatives need to investigate ways to improve their grain marketing.

Table 20—Types of transportation equipment operated by respondents, by selected States, 1971/72

State	Owned			Leased			
	Truck (straight)	Tractor trailer (truck)	Rail hopper car	Barge	Truck (straight)	Tractor trailer (truck)	Rail hopper car
	<i>Number of cooperatives</i>						
Alabama	6	3	0	0	0	1	0
Colorado	9	0	0	0	1	2	2
Idaho	3	0	0	1	0	1	0
Illinois	75	12	2	0	4	7	6
Indiana	42	4	1	0	3	9	5
Iowa	181	17	2	1	5	12	13
Kansas	97	14	2	1	2	6	4
Louisiana	2	1	0	0	0	1	0
Michigan	23	2	0	0	0	3	1
Minnesota	103	9	0	0	5	6	2
Mississippi	2	1	0	0	0	0	0
Missouri	22	7	0	1	2	2	1
Montana	9	0	0	0	0	0	0
Nebraska	72	5	1	0	3	5	3
North Dakota	29	2	1	0	1	3	2
Ohio	67	11	3	0	3	15	2
Oklahoma	29	3	0	0	0	1	2
Oregon	3	4	0	0	0	0	0
South Dakota	36	1	0	0	0	0	0
Texas	29	14	1	0	3	6	5
Washington	5	3	0	0	0	3	0
Wisconsin	20	4	0	0	0	0	0
Total	864	117	13	4	32	83	48
							8

Table 21—Mode of grain shipments, by all respondents, 1971/72

Type of grain	Truck	Rail	Barge	Other <sup>1</sup>
<i>Percent</i>				
Corn	41.7	31.9	20.3	89.1
Wheat	13.3	41.6	45.3	1.1
Soybeans	17.7	10.2	29.7	5.5
Grain sorghum	14.3	4.7	.4	.7
Oats	5.9	4.1	0	2.5
Barley	4.6	6.2	4.3	.3
Rye	.4	.4	0	.3
Flax	.5	.2	0	0
Rice	.9	0	0	0
Dry beans <sup>2</sup>	.3	.2	0	0
Dry peas	.1	.1	0	0
Sunflower	.3	.3	0	.5
Millet	0	.1	0	0
Total	100.0	100.0	100.0	100.0

<sup>1</sup> This includes grains moved by tractor and wagon and other types of equipment.<sup>2</sup> Includes mung beans.

Table 22—Commodity by respondents' mode of shipment, by all respondents, 1971/72

Type of grain	Truck	Rail	Barge	Other <sup>1</sup>	Total
<i>Percent</i>					
Corn	59.0	38.8	1.2	1.0	100.0
Wheat	26.1	70.0	3.9	<sup>2</sup>	100.0
Soybeans	63.6	31.6	4.6	.2	100.0
Grain sorghum	77.8	22.1	.1	<sup>2</sup>	100.0
Oats	62.7	37.1	<sup>2</sup>	.2	100.0
Barley	45.2	53.0	1.8	<sup>2</sup>	100.0
Rye	52.6	47.2	0	.2	100.0
Flax	75.7	24.3	0	<sup>2</sup>	100.0
Rice	97.3	2.7	0	0	100.0
Dry beans <sup>3</sup>	57.3	42.7	0	0	100.0
Dry peas	32.9	67.1	0	0	100.0
Sunflower	52.1	47.2	0	.7	100.0

<sup>1</sup> This includes grain moved by tractor and wagon and small amounts picked up by automobile.<sup>2</sup> Less than 0.05 percent.<sup>3</sup> Includes mung beans.

## OTHER PUBLICATIONS

*35th Annual Report of the Regional Grain Cooperatives.* Stanley K. Thurston. February 1975. Service Report 144, 34 pp.

*Improving FGDA Grain Marketing.* Stanley K. Thurston, Robert J. Byrne, Phil F. Brown, and Bert D. Miner. December 1974. Service Report No. 143, 76 pp.

*Accounting Exercises: Cooperative Elevator Bookkeepers.* Francis P. Yager. July 1974. Special Report No. 6, 40 pp.

*Guides to Improve Grain Handling and Transportation—South Central Minnesota.* Francis P. Yager, Robert J. Byrne, Richard M. Ackley and Roger A. Wissman. Service Report 137, 27 pp.

*A Plan for Integrated Rice Marketing in Louisiana.* Dale W. Wilson and David Volkin. February 1973, Service Report 130, 58 pp.

For copies, write Farmer Cooperative Service, U.S. Department of Agriculture, Washington, D.C. 20250

FARMER COOPERATIVE SERVICE  
U.S. DEPARTMENT OF AGRICULTURE

*Farmer Cooperative Service provides research, management, and educational assistance to cooperatives to strengthen the economic position of farmers and other rural residents. It works directly with cooperative leaders and Federal and State agencies to improve organization, leadership, and operation of cooperatives and to give guidance to further development.*

*The Service (1) helps farmers and other rural residents obtain supplies and services at lower cost and to get better prices for products they sell; (2) advises rural residents on developing existing resources through cooperative action to enhance rural living; (3) helps cooperatives improve services and operating efficiency; (4) informs members, directors, employees, and the public on how cooperatives work and benefit their members and their communities; and (5) encourages international cooperative programs.*

*The Service publishes research and educational materials and issues News for Farmer Cooperatives. All programs and activities are conducted on a nondiscriminatory basis, without regard to race, creed, color, sex, or national origin.*

